RAD-60 DOSIMETER USER'S GUIDE

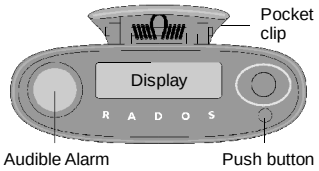
The RAD-60 is a Digital Pocket Alarm Stand Alone Dosimeter designed for use by people who may be exposed to gamma and X-ray radiation during their work. It provides programmable dose rate and dose alarms.

RAD-60 is microprocessor controlled and is operated using the display and the push button. The push button gives a bleep each time it is pressed. To complete an action, release button or press again (bleep) and hold down until a second bleep is heard.

The three digit display shows dose, dose rate and various messages. The display and sound signal are used to indicate alarms (dose, dose rate, low battery, defect, dose/dose rate overflow).

The RAD-60 is ready for use after the battery has been installed. It must be worn in a chest pocket (pocket clip on the outside) with no metal objects in the same pocket.

RAD-60 Top view



Switch on
Press push button until all segments are displayed.
-The dose/dose rate is displayed within 5 seconds.

Change display (dose/dose rate)
Press push button once.
-Display changes to dose/dose rate for 10 seconds.

Change display mode permanently (dose/dose rate)
Press push button once.
-Display changes to dose/dose rate.
Press push button until a bleep occurs.
-The display mode is now changed.

Switch off (OFF)
Press push button shortly until
-Display changes to OFF.
Press push button until a bleep occurs.
-The display goes blank.

Chirp on/off (CHr)
Press push button shortly until
-Display changes to CHr.
Press push button until a bleep occurs.
-The chirp is activated/deactivated.
-The mark is displayed when the chirp is active.

Reset cumulative dose (CLr)
Press push button shortly until
-Display changes to CLr.
Press push button until a bleep occurs.
-Display blinks cumulative dose.
Press push button until a bleep occurs.
-The cumulative dose is now reset.

Show dose alarm level (dAL)
Press push button shortly until
-Display changes to dAL.
Press push button until a bleep occurs.
-Current alarm level is displayed.
Wait for return to dose/dose rate display.

Change dose alarm level (dAL)
There are 6 different levels for dose alarm: 10 µSv, 100 µSv, 1 mSv, 10 mSv, 100 mSv, 1 Sv or 1 mR, 10 mR, 100 mR, 1 R, 10 R, 100 R and 0. User can select any of these for alarm level. If 0 is selected then alarm is deactivated.

Press push button shortly until
-Display changes to dAL.
Press push button until a bleep occurs.
-Current dose alarm level is blinking.
-Select alarm level by short pushes.
-Confirm the selected level with long push until a long bleep occurs.

Show dose rate alarm level (drA)
Press push button shortly until
-Display changes to drA.
Press push button until a bleep occurs.
-Current alarm level is displayed.
Wait for return to dose/dose rate display.

Change dose rate alarm level (drA)
There are 6 different levels for dose rate alarm:
10 µSv/h, 100 µSv/h, 1 mSv/h, 10 mSv/h, 100 mSv/h, 1 Sv/h or 1 mR/h, 10 mR/h, 100 mR/h, 1 R/h, 10 R/h, 100 R/h and 0. User can select any of these for alarm level.

If 0 is selected then alarm is deactivated.

Press push button shortly until
-Display changes to drA.
Press push button until a bleep occurs.
-Current dose rate alarm level blinks.
-Select alarm level by short pushes.
-Confirm the selected level with long push until a long bleep occurs.

Battery and display test (dIA)
Press push button shortly until
-Display changes to dIA.
Press push button until a bleep occurs.
-The alarm sounds for 5 seconds.
-If the battery symbol occurs on the display after the test, then the battery is weak and shall be replaced.

Low battery, normal operation
The battery symbol is blinking all the time and the audible alarm is a long bleep once an hour. The dose measurement is continued.
Note! Push button functions are disabled during low battery.

Low battery when switched on (Lob)
The display shows “Lob” and the battery symbol is blinking.
Audible alarm is short bleep once a second.
The dose measurement is prevented.

Dose alarm or Dose rate alarm (Blinking display)
The dose/dose rate display is blinking and the continuos audible alarm is on. The dose alarm can be reset by pressing the push button. The display changes to previously selected mode.

Audible alarms
Dose rate: - - - -
(4 bleeps each second)
Dose: __
(1 bleep in two seconds)

Simultaneous Dose and Dose rate alarm
The dose rate display is blinking and the continuous audible alarm is on. The dose rate alarm is dominating. Reset the alarm by pressing the push button. The display changes to previously selected mode.

Dose overflow alarm (doo)
Dose rate overflow alarm (dro)
When measurement limits are exceeded, display shows

doo dose overflow alarm
dro dose rate overflow alarm

Audible alarms
Dose rate OFL: . . . . . .
(8 bleeps each second)
Dose OFL: __ __
(2 bleeps each second)

Overflow alarms cannot be reset.

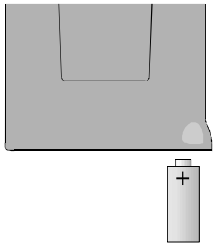
Error (DEF/Er)
The display blinks between text “DEF” and “Er+number”. The continuous audible alarm is on. The dose measurement is prevented.
If there is only blinking “Er+number” text on the display, the dose measurement may be continued. Only visual alarm is given, no audible alarm.
Error codes and types
Er1 = Calibration Er3 = Detector
Er2 = NVRAM Er4=RAM memory

If error should occur write down the Error number (Er+number) and return the dosimeter for servicing.

Maintenance and Decontamination

No specific maintenance is required except for periodic check of calibration. Cleaning and decontamination may be done with decontamination solutions suitable for use with ABS polymer and polycarbonate materials.

Replacement of the alkaline battery



Open the battery compartment cover with a coin. Remove the old battery and replace with new one. The + pole goes in first. Use only AAA alkaline battery (IEC LR03). Close the cover. After battery replacement the dosimeter automatically turns on.

Note! After fitting a fresh battery it is recommended to perform the functional test (dIA). If the battery symbol appears on the display after the test, refit the battery.

Specifications

Radiation detected:

Gamma and X-rays

Measurement range:

dose	1 µSv - 9.99 Sv
	0.1 mrem - 999 rem
dose rate	5 µSv/h - 3 Sv/h
	0.5 mrem/h - 300 rem/h

Measurement accuracy:

better than ±5% (Cs-137, 662 keV)

Energy response:

60 keV - 3 MeV, better than ±25%

Dose rate linearity:

better than ±15%

Operational temperature range:

-20°C to +50°C

Operational humidity:

10 - 90% RH

Dimensions:

78 * 67 * 22 mm, excluding pocket clip.

Weight:

80g, including battery

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